

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/09963

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B41J 2/01, 2/165; C08J 7/04

US CL : 347/23, 34, 102; 427/261, 508

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 347/23, 34, 102; 427/261, 508

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
USPTO APS EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,092,890 A (WEN et al) 25 July 2000 (25.07.2000), col. 3, lines 6-44; col. 4, lines 29-54.	1-17, 38-41, 48-63
Y,P	US 6,220,691 B1 (MARTIN et al) 24 April 2001 (24.04.2001), col. 7, lines 27-46.	34-37
Y	US 4,293,233 A (HOFFMAN) 06 October 1981 (06.10.1981), col. 4, lines 3-68.	25-33, 42-47
Y,P	US 6,302,514 B1 (EADE et al) 16 October 2001 (16.10.2001), col. 4, lines 44-59.	27-32
Y	US 5,809,877 A (SZYSZKO et al) 22 September 1998 (22.09.1998), col. 9, lines 39-67; col. 10, lines 39-67.	25-33, 42-47
X,E	US 6,312,123 B1 (CODOS et al) 06 November 2001 (06.11.2001), cols. 3-6.	1-24, 38-41, 48-63
Y	US 6,270,858 B1 (PAULSON) 07 August 2001 (07.08.2001), cols. 3-4; col. 5, lines 10-29.	18-24, 25-37, 42-47



Further documents are listed in the continuation of Box C.



See patent family annex.

<p>* Special categories of cited documents:</p>		"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

07 May 2002 (07.05.2002)

Date of mailing of the international search report

08 JUL 2002

Name and mailing address of the ISA/US

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Form PCT/ISA/210 (second sheet) (July 1998)

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
 2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
 3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
 4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
- Remark on Protest** ☐ The additional search fees were accompanied by the applicant's protest.
☒ No protest accompanied the payment of additional search fees.

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BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-24, 38-41 and 48-63, drawn to a method and apparatus of printing with the use of curable substance with activable dye.

Group II, claims 25-33 and 42-47, drawn to a method and apparatus of digital printing with the use of particular control method and means.

Group III, claims 34-37, drawn to a method of printing involving removal of fibers.

The inventions listed as Groups I to III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of Group I is the particular curable substance with activable dye claimed therein while the special technical feature of Group II is the specific digital control printing method and means claimed therein, while the special technical feature of Group III is the specific printing involving removal of fibers claimed therein.

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